

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

This Plan Examiner's "Bidability Review" Guide is an outline of the actions that should be taken during a PS&E "bidability review". This checklist helps assure that a PS&E is in good biddable condition (i.e. – Complete, Concise, & Consistent within itself) at the time of PS&E submittal to the Central Office.

Preliminary

A. Plan letter should define:

1. Type of work (as defined for each project and/or contract).
2. Non-standard construction or bidding practices and explain reasons.
3. That the PS&E has been reviewed (during the two month time period prior to PS&E due date) in the various Central Office units and that comments have been received from those offices and appropriate revisions have been made with a date supplied by the reviewer for the appropriate slot in the matrix at the back of the plan letter for the following:
 - a. Bureau of Highway Development, Design Services, Project Development Unit
The specific district Project Development Liaison engineer needs to review ONLY STH, USH, & IH PS&E's for accurate roadway design, conformance to the design standards, and to assure it conforms to the DSR. The acceptance date for the plan letter matrix must be obtained from that reviewer. (See attachment for district Project Development Liaison PE contacts)
 - b. Bureau of Highway Operations, Signing & Marking Implementation Section
(Matt Rauch, 608-266-0150 HFSTB or 608-246-5305 Sign Shop) needs to review all signing plans, items, and special provisions. This Section creates the sign layout sheet PDF files or supplies the required hard copy sign plate drawings for each plan set that requires them to the Bureau of Construction, Contract Unit. An acceptance date for the plan letter matrix must be obtained from this Section.
 - c. Bureau of Highway Operations, Electrical Implementation Section (James Sheskey, 608-277-7717 or James Kazda, 608-266-8416 or Graham Heitz, 608-266-1260) needs to review all Traffic Signals & Street Lighting plans, items, and special provisions. An acceptance date for the plan letter matrix must be obtained from this Section.
 - d. Bureau of Highway Operations, Safety Section needs to review ONLY STH, USH, & IH PS&E's Work Zone Traffic Control detail sheets, bid items, and special provisions. An acceptance date for the plan letter matrix must be obtained from this Section.
 - e. Bureau of Highway Operations, Winter Operations and Roadside Management Section (Either Leif Hubbard, 608-267-6884 or Dick Stark, 608-266-3943) must review all landscape planting plan details, items, and special provisions. An acceptance date for the plan letter matrix must be obtained from this Section.
 - f. Bureau of Structures - The bridge plans, box culvert plans, retaining wall plans, & sign bridge plans must be sent to Steve Revello 608-266-5095 in the Bridge Office for review and the revised final plans need to be re-sent to Steve Revello in the Bridge Office prior to or at the same time, but separately from, the PS&E delivery to the Central Office, Bureau of Construction, Contracts Unit.

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

4. Information to be included in the advertisement, such as: name and telephone number of contact person or time and place of pre-bid meeting (if a pre-bid meeting is to be held), and provide a brief agenda for the pre-bid meeting.
 5. Project design number.
 6. District design project manager's name, phone number and e-mail address
 7. Name, phone number, and e-mail address of person to contact for project information after the project is advertised for bids. This person's name will appear in the advertisement.
 8. Consultant designer(s) name, phone number, and e-mail address
 9. If project is Federally Funded and On-the-Job Training items are required, items ASP.1T0A, On-the-Job Training Apprentice at \$5.00/hr and ASP.1T0G, On-the-Job Training Graduate at \$5.00/hr with the number of trainees and hours required per Project I.D. for both items. (When required, assure these items were added appropriately to the Trns•Port Estimate and that their \$5 item price has been properly pre-established for each item. See FDM Procedure 19-5-35, Figure 55 for Trns•Port PES Pre-Established price item guidance.)
- B.** Review special provisions to assure: 1) formatting is up-to-date and correct (for questions regarding this, please contact either Jan Kinar, PE @ 608-266-3611 or Ginnie Vike @ 608-266-3152); 2) every ".S" item and every "SPV" item in the completed Trns•Port Estimate has a special provision article; and 3) that all ".S" item articles and every "SPV" item articles have a bid item in the Trns•Port Estimate.
- C.** Check plan sheets for proper order. (See Procedure 15-1-1 for guidance)
- D.** Has all the railroad coordination been performed and approvals been received from the Bureau of Rails & Harbors (For at-grade crossings, contact Mark Morrison @ 608-266-2941 or for structures, contact Mark Leemon @ 608-266-0233)
- E.** Does the contract have Status 1 for all the Right-Of-Way acquisition at PS&E? If not, contact the district project manager regarding viability of submittal of this PS&E.
- F.** Are all the Utility interests clear at PS&E? If not, the viability of submittal of this PS&E should be discussed with the district or within the district.

Plans - General

- A.** Is all information shown inside printing margins?
- B.** Lettering size:
1. Minimum lettering height on required 11"x17" English size originals shall be 0.06 inches. (except right of way plat)
 2. Titles should be approximately 0.10 inch lettering height on required 11"x17" English size plan originals.
 3. If lettering sizes are too small, correction will be necessary to make plan notes readable in the required 11"x17" English size plans.
- C.** Notes:
1. Check that notes referring to Standard Detail Drawings refer to the name of the drawing, not the number.
 2. Check that construction notes are solid line notes; not screened line notes, etc
 3. Check for notes with blank spaces (data fields) and either fill in the data field with appropriate information or remove the note completely.
- D.** Plan Details, check that:
1. Special Details pertain to the contract and all required Special Details are in the plan (no more, no less).
 2. Details are not crammed together - add lines for separation if appropriate.

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

3. Details are correct, clear and easy to read.

Title Sheet (Procedure 15-1-10)

A. Location project location map, check for:

1. North Arrow.
2. Town and Range.
3. Correct Project(s) location.
4. Begin and End Project notes.
5. Begin and End notes for construction work outside project limits.
6. Equations.
7. Highway designations shown.
8. Road or street names if referred to in special provisions.
9. County names, if more than one.
10. Graphic Scale.
11. Structure Numbers (on which work is being done).

B. Design Designation - is it filled in?

C. Net centerline length (listed to 3 decimal places to right of decimal point):

1. Project breakdown. (If more than one Project I.D. is part of a plan set, give a separate "Net Length of Centerline" for each Project I.D., even if the length is 0.000 for the Project I.D.)
2. Total.

D. Titles, check that:

1. Correct format is used: (Also see Procedure 15-1-10, "Project Title".)
 - a. Each project title and sub-title should match FIIPS exactly (contact district for this FIIPS information), except all words should be spelled out on the title sheet and on all other PS&E documents.
 - b. Title (Bridge and Approaches when approach work is part of the contract and if a city street, show street name and then City of _____ after it).
 - c. Sub-Title (from where-to-where, City of XXXX if not already part of the title for a city street project, etc.).
 - d. Highway, road or street designation (STH XX, USH XX, Town Road, Local Road, etc.).
 - e. County name.
 - f. Project I.D. number.
2. Consistent with project title on engineer estimate.

E. Signature Block:

1. Should not be spliced into the hard copy "original" title sheet.
2. Original signatures, not reproductions.
3. Signature lines for required signatures only - remove any not needed.
4. Local government officials when appropriate.
5. Consultant block with professional engineer stamp, signature, and date when appropriate.
6. Names of Surveyor, Designer, District Examiner, and District Supervisor.

F. Conventional Symbols

1. Are additional symbols included as necessary?

G. State map:

1. The county in which the project is located should be cross-hatched and the project location shown.

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

- H. "Order of Sheets" block:
 - 1. Is it the latest standard format?
- I. Check State Project numbers:
 - 1. In blocks near center of title sheet.
 - 2. Upper right hand corner (one project number per line).
- J. Margin information: (See Procedure 15-1-10 "Margin Information", Procedure 15-1-5 Figure 1 example, and the appropriate Procedure 15-5-5 Figure 1 "Title Sheet" plan sheet vehicle.)
 - 1. Project information should be in left binding margin, oriented to be read when facing the title sheet from the left edge (see procedures referenced above for orientation clarification).

Written Material, Typical Section and Detail Sheet

- A. Preferred order of Section 2 sheets: (Procedure 15-1-1)
 - 1. Written material.
 - 2. Project Overview.
 - 3. Typical sections.
 - 4. Construction details.
 - 5. Layout details:
 - a. Non-typical sections
 - b. Intersections
 - c. Interchanges
 - d. Contour Maps
 - e. Cross Section Match line
 - f. Erosion Control and Drainage
 - g. Storm Sewer and Utilities
 - h. Planting
 - i. Signing
 - j. Lighting
 - k. Traffic Signals
 - l. Pavement Marking
 - m. Traffic Control and Construction Staging
 - n. Fencing
 - o. Alignment
- B. First Section 2 Sheet: (Procedure 15-1-15)
 - 1. The first typical section sheet should include:
 - a. Standard Detail Drawing (SDD) list (See FDM Procedure 15-10-10, Figure 1, pages 1-13 for the current SDD number list and helpful tips)
 - (1) Correct updated numbers listed.
 - (2) Do we have SDD's to cover all bid items when appropriate?
 - (3) Is each drawing as listed really needed?
 - b. Utility list and contact persons.
 - c. DNR contact person (if plan has erosion control plan)
 - d. Plan-specific customized list of unusual or non-standard abbreviations.
 - e. Surface boring log when salvaging Asphaltic Pavement or Pulverizing & Relaying Asphaltic and also include lab tests when Salvaged Asphaltic Pavement is bid.
 - f. General Notes should not duplicate standard specifications or special provisions.

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

C. Typical Sections, check for: (Procedure 15-1-15)

1. All portions of the mainline
2. Major side Roads
3. Minor side roads
4. Ramps and tapers
5. Existing sections when appropriate
6. Commercial and residential driveways
7. Temporary construction
8. Check that typical sections include widths, thicknesses, slopes, station to station, right or left, traffic lanes, (1) pavement ties, (2) tie bars, (3) doweled *, (4) tined (when appropriate), curb and gutter, sidewalk, topsoil or salvaged topsoil, underdrains, geotextile fabrics, removals, islands, barriers, etc.
 - (1) Item 416.0610; when drilled in.
 - (2) incidental – when placed into wet concrete.
 - (3) include with the Concrete Pavement item label when doweled transverse joints are required (see Procedure 15-1-15, page 2 for guidance).

*dowel bars are incidental when placed in wet concrete; use item 416.0620 Pavement Dowel Bars when required to be drilled into existing concrete.

Note – Tie Bars and/or Pavement Ties (when required) must be shown and labeled on the Typical Finished Section longitudinal joints and appropriate Construction Details to eliminate the problems caused when WisDOT 2003 Standard Specifications sub-section 105.4(4) is applied (this is also the reason for including the word “doweled”, when required, with the Concrete Pavement item labels).

 - (4) include with the Concrete Pavement item label when “tining” is required (see Procedure 15-1-15, page 2 for guidance).
9. Check that typical section labels match bid item titles.
10. The pavement structure of short sections of side roads, frontage roads, private drives and ramp tapers may be shown by note on plan or detail sheets.

Construction Details (Procedure 15-1-20)

A. Examples of items of construction requiring details.

1. Riprap, retaining walls, special inlets**, special covers*, pipe railing, steps, driveways, sign installation, transitions, planting charts, etc.
 - * Is approximate weight listed on special covers?
 - ** minimum embedment required; ultimate soil bearing capacity required; engineering properties of retained and foundation soils required.

B. Check for:

1. Special details which conflict with standard practices.
2. Special details which conflict with Standard Detail Drawings called for in the plan.
3. Layouts and dimensions as appropriate.

C. Frequently used special details and CADD cell special details:

1. Are they correct for this plan?
2. Are dimensions filled in or corrected?
3. Is unnecessary information or options included? If so, remove.
4. Are they updated to current spec book terminology (ie: upper layer/lower layer for asphalt pavement and crushed aggregate base course now is base aggregate dense)?

D. Bid Items:

1. Are there bid items to cover the work shown?
2. Are the bid item titles correctly shown on the special detail (must match special provisions and estimate exactly)?

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

- E.** Check "Brand Name" labels (proprietary item titles) which are correct only if:
1. The list includes 3 names as approved equals.
 2. The name is on the Product Selection List. (Procedure 19-1-5)
 3. On a project-by-project basis, approval has been received from the specific district's Central Office Project Development Liaison engineer (see listing below). This approval is acquired via an email letter justification for each proprietary item explained and approval requested. The approval is granted when the district's Central Office Project Development Liaison engineer replies to the email letter with an approval statement for which items per project have been approved.

D-1, Bob Reukema (267-4496) email: robert.reukema@dot.state.wi.us

D-2, Will Anderson (266-8663) email: william.anderson1@dot.state.wi.us

Marquette Interchange, Nathan Czech (267-7945) email: nathan.czech@dot.state.wi.us

D-3 & D-7, Brian Revello (266-2782) email: brian.revello@dot.state.wi.us

D-4, D-5 & STH 29 Team, Tom Dobson (266-1496) email: thomas.dobson@dot.state.wi.us

D-6 & D-8, Larry Jones (267-7954) email: larry.jones@dot.state.wi.us

- F.** If special provisions or standard specifications say "as shown" or "detailed on plans", check for the detail.
- G.** Check for appropriate use of:
1. Items marked "by others", "in place", or "existing"
 2. The term "State furnished, contractor installed".
 3. The term "required", when necessary to understand the detail
- H.** Include a customized (plan-set specific) "Order of Section 2 sheets" on the first Section 2 sheet for projects, which have many construction details and could benefit from this list.

Layout Details (Procedure 15-1-20)

- A.** Non-typical sections, Intersections, and Interchanges:
1. Concrete pavement grades and curb and gutter grades shown for non-typical sections
 2. Intersections and interchanges shall be shown on detail sheets
 3. Islands; check for dimensions & type (asphalt, concrete, etc.)
 4. Are radii, taper lengths, turning lanes and passing lanes clearly dimensioned for field layout?
- B.** Erosion Control and Drainage:
1. Shall be shown on detail sheets or included on plan and profile sheets.
- C.** Storm Sewer and Utilities:
1. Shall be shown on detail sheets.
- D.** Permanent Sign Details
1. Check that the Bureau of Highway Operations, Signing & Marking Implementation Section (Matt Rauch, 608-266-0150 HFSTB or 608-246-5305 Sign Shop) has created the sign layout sheets PDF file or supplied to the Bureau of Construction, Contract Unit the required hard copy sign plate drawings.
- E.** Pavement Marking Details:
1. Shall be shown on detail sheets.
 2. Check for conflict with Standard Detail Drawings.
 3. Check for correct bid item titles or correct marking "type" labels which match Standard Detail Drawing terminology defined by detail (such as "Centerline," "No Passing," "Laneline," "Edgeline," etc.) on construction details.
 4. Curb Ramp Detectable Warning Fields must be labeled on plan.

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

F. Traffic Control and Construction Staging:

1. Check and identify items typically bid separately from the item of Traffic Control, such as:
 - a. Temporary delineators and posts
 - b. Removing pavement marking
 - c. Temporary pavement marking, stop lines, removable tape

G. Alignment Diagrams:

1. Either separate detail sheets or alignment shown on plan sheets.

Miscellaneous Quantities Sheets (Procedure 15-1-30)

A. General layout:

1. Lettering should be at least 0.06 inch height on required 11"x17" English size plans.
2. Check that Miscellaneous Quantity listings start with the lowest item number item at the top left of each sheet and that Miscellaneous Quantity sheets are organized numerically based on the item numbers included on each Miscellaneous Quantity sheet.
3. Check for use of line-work to separate tables or entries in tables.
4. Check that quantities shown on various tables on detail sheets are summarized on miscellaneous quantities sheet.
5. On plans with multiple projects or multiple categories, check that quantities are split accordingly and labeled. Quantity breakdowns by project and/or category are required, and each breakdown category must have a subtotal.
6. Insure that multiple columns of lists for a single item have a SUB-TOTAL for each column and that each single item has a TOTAL clearly shown.
7. Check to insure non-participating items and quantities are labeled. (This may be accomplished by designating the proper Trns•Port Estimate category under which the non-participating item is included.)
8. Check that items that are normally shown on the miscellaneous quantity sheet have been listed.
9. Check for proper unit of measure.
10. Follow through to the engineer estimate with any changes.
11. Quantity totals on miscellaneous quantity sheets must agree with project totals in engineers estimate.

B. Check for the following special information:

1. Assure SAME DAY PAVEMENT MARKING POLICY is used on ALL rural type resurfacing contracts constructed under traffic. (See Procedure 11-50-1 and Note 2 on Standard Detail Drawing "PAVEMENT MARKING, MAINLINE")
2. If any bid item numbers are shown, ALL bid item numbers must be shown. They must be correct, current, and consistent with those used in the Trns•Port PES estimate(s) in the contract and the correct two-digit number MUST be included behind each "SPV." item number. (See Figure 12 of Procedure 19-5-25).
3. Insure that for the item "Removing Small Pipe Culverts," all pipes from 12" diameter, but smaller than a 60" diameter, are listed for payment. Also insure a DESCRIPTION column is included giving the diameter, length, and type of pipe to be removed at each location. (See example in Procedure 15-1-5, Figure 20, page 1 of 5)
4. Insure all bridges to be removed with a span length of 20' or greater, all bridge-like structures to be removed with a span less than 20', all rectangular culvert structures

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

to be removed of any size, and all non-rectangular culverts to be removed which are 60" diameter or larger, are paid for under "Removing Old Structure, (Station)"

5. Assure that all removal items (other than those standard "204." items which have a removal title already designated) are not bid as "SPV." items, please use the appropriate standard "204.9xxx" items, based on the correct Unit of Measure intended.

C. Earthwork Summary:

1. An earthwork summary shall be included for intermittent grading operations and may be included for typical grading projects.

D. Drainage Table:

1. For the culvert pipe items, metal thickness(es) and concrete pipe class(es) are required to be shown.
2. Are class IV or V culverts or storm sewer specified without any apparent reason? (See Procedure 13-1-25)
3. When JOINT TIES for concrete pipe are to be used, the number (each) required must be given at each location where required. The column for these should be noted as "NON-BID ITEM, FOR INFORMATION ONLY".

E. "Lump Sum" and "Each" bid items: (See Procedure 19-5-5)

1. Are quantity breakdowns given so the contractor can bid the item?
2. Is the amount of work reasonably non-variable for the "Each" bid items?

F. Quantity Accuracy:

1. Check miscellaneous quantity breakdown of items for completeness of work within the various construction locations.
2. Spot check items for correct totals on miscellaneous quantity sheets and assure that all item totals match engineer estimate.

Right-of-Way Sheets (Procedure 12-15-1)

- A. If new Right-Of-Way is required, has a Right-Of-Way plat been included in the plan set?
- B. Does Right-Of-Way Plat cover entire construction limits?
- C. Are slope intercept lines shown?

Plan and Profile Sheets (Procedure 15-1-35)

- A. Do plan sheets cover all construction areas?
- B. Begin and End Project notation is required.
- C. All equations should be shown.
- D. Are slope intercept lines shown?
- E. Structure notes are required for:
 1. Removing Old Structure, Station _____" items (include old bridge number, length and type).
 2. New structures including retaining walls, noise walls and sign bridges.
 3. Structure repairs (deck overlays and deck replacements).
- F. Earthwork balance points shall be shown.
- G. Right-Of-Way:
 1. Are right of way, easement and permit limits shown?
 2. Is all work, including private entrance, drainage, culverts and riprap, shown inside Right-Of-Way or permit limits?
 3. If plan sheets are also used as R/W plat, then requirements of Procedure 12-15-5 must be met.
- H. Culvert notes are required.

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

- I. Removal of miscellaneous items should be noted.
 - 1. Culvert removal note should indicate type and size.
- J. North arrows, curve notes, stations, road names, etc. should be shown.
- K. Profiles are required for all grading areas, including long driveways and side roads.
- L. Are types of intersection and curb ramp types shown? (Unless correctly covered by a general note.)
- M. New work distinguished from existing facility by legend, note or screening.
- N. If rock excavation is bid, the top of rock lines should be shown and labeled on the profiles.
- O. If marsh excavation is bid, a line showing the bottom of marsh should be shown and labeled on the profile.

Bridge Drawings

- A. Check plan letter for structure drawings required from the Bureau of Structures.
 - 1. The following require structure drawings:
 - a. Bridges
 - b. Box culverts
 - c. Large sign footings
 - d. High mast light footings
 - e. Retaining walls or noise walls
 - f. Sign bridges
- B. Check items and quantities on structure plan against engineer estimate.

Cross Sections (Procedure 15-1-45)

- A. Are cross sections included for grading areas?
- B. Are earthwork tables required and if so, are they filled in?
- C. Have special earthwork listings been supplied if required?
 - 1. Miscellaneous quantities station-to-station earthwork sheets or earthwork data sheets.
 - 2. Are computer earthwork data sheets supplied in proper format for use in plans?
- D. Is all information within printing margins?
- E. If rock or marsh lines are shown, are the Excavation Rock, Excavation Marsh, and Excavation Common items bid? (Note Unclassified Excavation is no longer a bid item.)

Trns•Port Estimate

General:

- A. Have all the WisDOT 2003 Standard Specifications LS items been included appropriately as required?
 - Refer to items:
 - 213.0100, Finishing Roadway (Project)
 - 618.0100, Maintenance and Repair of Haul Roads (Project) for all STH, USH, & IH (Not Required for Local Road Projects or STH, USH, IH Projects within a city which has an on-going street maintenance program and where it would be impossible to determine damage from the State project's construction vehicles over others using the same roadways.)
 - 619.0100 Mobilization
 - 642.5xxx, Field Office Type _
 - 643.0100 Traffic Control (Project)
- B. Have the Prepare Foundation LS items (211. xxxx) been considered for performing necessary foundation preparations that resulted from construction outside the contractor's control; especially for asphaltic resurfacing projects or for resurfacing sections of rehab.

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

projects? (See FDM Procedure 19-7-1 for guidance on when to use these items and how to address them appropriately in the plan and Miscellaneous Quantity listing.)

- C. For a Structure & approaches type project, is a Temporary Structure necessary? If so, is the item 526.0100, Temporary Structure (station) included in the Trns•Port Estimate and has the STSP # 526-010 been included in the Special Provisions?

Trns•Port PES Client Server (FDM Procedures 19-5-1 thru 55)

- A. **"Projects"** (Engineer Estimates) – menu selection "Open Project List => Select your Project => and then click on Edit => Tabbed Folder Change"; check under the "tabs" to ensure the appropriate data fields have complete and accurate data. See FDM Procedure 19-5-35, Figure 52 (Data field requirements are supplied there)
1. First and last order of business - Numbering Estimate Items is very important before a bidability review is performed and always after any Trns•Port Estimate item additions, item deletes, item number changes, or Supplemental Description changes have been made. If you suspect any Trns•Port Estimate changes have been made, ALWAYS re-renumber again, as a safeguard. This is done by using the menu selection "Open Project List => Select your Project => and then click on File => Run Process => Renumber Project Estimate Items."
 2. Under the "General" tab (see Figures 5 & 6 of Procedure 19-5-35):
 - a. Page 1 - Check that the project "Description" data fields, both the title line (first line) and limit/sub-title line (second line), match the title sheet exactly
 - b. Page 1 – Ensure the "Road Name" shows the Title, Sub-Title, and Route (in that order; abbreviations are acceptable here since it's for the estimate cover sheet information only)
 - c. Page 1 - Ensure that the "Status" data field is set to "PSE" prior to PS&E submittal.
 - d. Page 1 – Ensure the "Spec Year" is correct (NOTE - "03" is correct for year 2003 WisDOT Standard Specifications and Supplementals)
 - e. Page 1 – Ensure that "Const. Eng. Pct." has a number shown (should match the E&C shown in most of the estimate's categories)
 - f. Check that the correct "District" number is shown
 - g. Page 2 – Check that "Field Book" shows an "X."
 3. Under the "Counties" tab (county information is mandatory, see Figure 7 of Procedure 19-5-35):
 - a. Ensure the correct "County or Cong. Dist Code" CO__ number is shown with 100% in the "Percent of Project Length" field
 - b. Check that multiple county projects show each of the counties with a % breakdown for each county that when totaled = 100% or "COOO" for DISTRICTWIDE with 100% in the "Percent of Project Length" field (whichever is correct)
 4. Under the "Categories" tab (see Figures 8 & 9 of Procedure 19-5-35):
 - a. Check that engineer estimates begin with category 0010 and that all categories are loaded as four digits; i.e. 0010, 0020, etc.
 - b. Check that there is a separate category for each project section that has different funding.
 - c. Page 1 - Check that each category has a "Category Description" added that makes sense for the category's items.
 - d. Page 1 - Ensure that all categories always and only have "0001" in the "Proposal Section Number" data field.

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

- e. Page 1 - Check that the "Category Work Class" and the "Federal Work Category" data field Type Codes are correct for each category in accordance with FDM Procedure 19-5-35, Figure 54 (Note – for nonparticipating categories under the "Federal Work Category" data field, use either "NSP", No State Participation, on state-funded projects or "NFP", No Federal Participation, on federal-funded projects)
 - f. Page 1 - Check that the "Federal Construction Class" is completed (usually "LET" is correct)
 - g. Page 1 - Check that each category has the correct "Construction Eng. Pct." (E&C) included; especially if any category requires a different E&C than at the Project Level.
 - h. Page 1 - If the project is to be given a length, ensure each category has the correct length included in the "Category Length" data field (note that the category lengths for each project are totaled on the Trns•Port PES "Detailed Estimate Cover Page" and that total should match what each project's title sheet shows as "Net Centerline Length" per project)
 - i. Page 1 – Ensure all non-participating categories' length is 0.000 miles.
 - j. Page 1 – For categories that only deal with a B- number bridge (mandatory) or C- number box culvert (if a separate category); in the "Bridge ID" data field, show the bridge number or box culvert number; in the "Bridge Length" data field, show the correct bridge length (typically end of deck to end of deck); in the "Bridge Width" data field, show the clear roadway width; in the "Number of Spans", show the number of bridge spans or number of box culvert cells; and in the "Bridge Type" field, choose the correct number (see Figure 53 of Procedure 19-5-35).
 - k. Page 2 – If the project is to be given a length, show in the "Beginning Station" and the "Ending Station" data fields the correct information; typically shown as "Sta. xx+xx.xx" or depending on your project, you may have "Log Mile xx.xx", etc.
 - l. Page 2 – The "Unit Number" data field should always be left at the "000" default setting.
5. Under the "Funding" tab (see Figures 12-20 of Procedure 19-5-35):
- a. Ensure each category is funded.
 - b. Ensure each "Priority" has "Participation Pct" that, when added together, totals 100% for each "Priority" (usually only for Priority 1; but when Priority 1 has a funding limit, then for Priority 1 and for Priority 2)
 - c. If there are funding issues that need to be addressed, correct the funding in the Trns•Port project categories, so each category's funding is in accordance with what the District Planning Office shows in FIIPS for each category (ultimately FIIPS and the Trns•Port Estimate categories must match).
6. Under the "Worksheet" tab:
- a. Check that all items (in each category) that require a pre-established price have the correct price pre-established in Trns•Port PES (See Procedure 19-5-35, Figure 55 for price and guidance to which items these are); it's shown as a "Y" in the appropriate item number line under the "Fixed Price" column. (Note - If revision is required, make the correction using the icon menu selection "Open Project List => Select your Project => and then click on Category => Items." Right click on the item that needs revision and then click "Change" in the drop-down menu and click the box next to "Pre- Established

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

Price." An "X" in that box means the item's "Estimated Price" is Pre-Established in the "Schedule of Items." To remove the "X", click the box again.) NEVER CLICK the "Non-Bid Item" box to have it show an "X"; that removes the item from the "Schedule of Items" completely. Basically, if we have an item in the Trns•Port Estimate, it should always show up in the "Schedule of Items."

- b. Check that the non-standard items are renumbered into the correct order after renumbering via menu selection "Open Project List => Select your Project => and then click on File => Run Process => Renumber Project Estimate Items." If not, they can be forced to the correct order by changing the "Project Item Line Number" in the "Worksheet" to be one greater than the item it's to follow and then when you renumber, the items will be renumbered in the correct order.

B. "Proposal" icon on menu bar (Schedule of Items, Proposal Estimate, and for producing all Project Estimates associated with a Proposal at once) – check first that a Proposal has been created for your contract by using the menu selection Open Proposal List => and check for your proposal. Once you find it, Select your Proposal => click on Edit => Tabbed Folder Change", check the "tabs" to ensure the appropriate data fields have complete and accurate data. See Procedure 19-5-40, Figure 11 for data field requirements.

1. First and last order of business – It is very important to generate Proposal Section and Line Numbers before a bidability review is performed and always after any Trns•Port Estimate item adds, item deletes, item number changes, or Supplemental Description changes have been made to any of the projects associated with your proposal. If you suspect any Trns•Port Estimate changes have been made, ALWAYS generate Section and Line Numbers for the proposal again, as a safeguard. Use the menu selection "Open Proposal List => Select your Proposal => and then click on File => Run Process => Generate Section and Line No's."
2. Under the "General" tab, Page 1 (see Figure 3 of Procedure 19-5-40):
 - a. Check that the "Spec Year" matches that of all the associated project IDs. (NOTE - "03" is correct for year 2003 WisDOT Standard Specifications & Supplementals).
 - b. Check that CNTL PCN is correct with showing the Lowest Project ID Number.
 - c. Check that the correct County or Counties are shown.
 - d. Check that the correct "District" number is shown.
 - e. Check the "Proposal Fund Type" to see if it makes sense with whether the project is state funded, federally funded, or state bond funded, etc.
 - f. Check that the correct "Contract Type" is completed (usually "LET" is correct).
 - g. Add the correct determined contractor classification into the "Proposal Type" and "Contract Work Type" data fields, after the plan review is complete.
 - h. Note; page 2 should remain as provided per automatic default.
3. Under the "Sites" tab (see Figure 6 of Procedure 19-5-40):
 - a. Ensure the "Site" number "00" is added. (If there are any interim liquidated damage sites required, they should be shown as sites "01", "02", etc.)
 - b. Check each "Site" for the correct contract "Type of Days," the correct "Number of Days" or "Specified Completion Date" (whichever is correct), the correct dollar value "Liquidated Damages per Day" (see WisDOT Standard Specifications or the current Year Edition of the Supplemental Specifications, sub-section 108.11, for the current Liquidated Damages dollar values), and the correct "Description." (The contract type and the days or date must match

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

what the Proposal Cover Sheet says and that should also match the Contract Time Chart. Also note - Contract Time Charts must be contract inclusive; not set up per project.)

4. Under the "Projects" tab (see Figures 7 & 8 of Procedure 19-5-40):
 - a. Ensure all the correct projects that are part of the contract have been associated with the contract proposal.
 - b. If a project has to be added, use the single UP "Add Selected" arrow to add a highlighted designated project from the "Projects Master List" and if a project has to be deleted, use the single DOWN "Delete Selected" arrow to delete the highlighted designated project. Do not click on either the double UP "Add All" arrow or the double DOWN "Delete All" arrow, for the obvious reasons.
5. Under the "Sections" tab (see Figure 10 of Procedure 19-5-40):
 - a. Ensure that "Section Number" 0001 is shown. This indicates that the "Generate Section and Line No's" process was run at least once since the Proposal was created)
 - b. Before printing the proposal documents for letting, change the "Section Description" to say CONTRACT ITEMS, unless what is already there is acceptable for the whole Proposal. Note, this description shows up on top of the first sheet of the "Schedule of Items" and the "Proposal Estimate."
6. Under the "Items" tab (standard items):
 - a. Check that Units of Measure shown agree with those shown on the Miscellaneous Quantity sheets (examples: "Base Aggregate Dense" items can be either C.Y. or Ton unit of measure, "Clearing" and "Grubbing" items can be either Sta., I.D., S.Y., or Acre unit of measure).
 - b. Check that individual portions of a prorated item add up to 1.00 exactly. See FDM Procedure 19-5-15 for the list of items that are proratable.
 - c. Ensure correct Supplemental Descriptions are added to all items, which require them. Note, in Item Version "03" on the "Projects" change item screen, if an item requires a Supplemental Description, the "Supp. Desc. Required" box will be checked to alert you of that requirement.
7. Under the "Items" tab (non-standard items):
 - a. Check that the correct unit of measure for Trns•Port non-standard items are used for the matching special provision items Unit of Measure and the Miscellaneous Quantity listings. For one example, it's not correct to use item number SPV.0060, EACH, for a L.S. item SPV.0105, when the Special Provision article shows that L.S. is actually the required Unit of Measure.
 - b. Each unique Unit of Measure non-standard item must have a Supplemental Description, which must begin with a two-digit number. See Figure 12 of Procedure 19-5-25. Leaving gaps in the numbers is OK and it could be beneficial to do this when designers are starting a PS&E, to allow for adding items in the locations/order desired in the future. Check that all the non-standard item Supplemental Descriptions match the Special Provision article item numbers and titles and that the Miscellaneous Quantity listing item numbers and titles concur.

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

8. Under the "Items" tab (General):

- a.** Check that item prices are NOT carried out to four or five places right of the decimal. (This is caused by different estimated item prices in different places in the proposal because Trns•Port PES is averaging these different prices. To correct this, highlight the incorrect price, key in the correct price, and click on the "Save Folder" icon to save the correct price to each location where that item appears throughout the proposal's associated project estimates.)
- b.** Check for items that are incorrectly repeated. This is caused by descriptions that are slightly different or the units are different. To correct this, use the menu selection "Projects/Categories/Items" and fix the descriptions or units appropriately.

C. Engineer Estimate Bid Items (General):

- 1.** Check that all the contract work is either covered by a bid item, is specified to be included in pay for other items, or is to be done by others.
- 2.** Review all item numbers, descriptions, supplemental descriptions, and units of measure for reasonableness. (Cursory Review)
- 3.** Check that correct asphaltic item(s) is (are) bid.
- 4.** Check that all required by WisDOT 2003 Standard Specifications Asphaltic QMP & Incentive items have been bid correctly:

See items:

- 460.2000, Incentive Density HMA Pavement (must be used for all total HMA Pavement quantity >750 Ton)
- 460.3000, QMP HMA Mixture (must be used for all total HMA Pavement quantity > 500 Ton).

- 5.** Check that all other desired QMP & Incentive items are bid appropriately.

See items:

- 301.0100.S, QMP Base Aggregate
- 415.1195.S, QMP Concrete Urban
- 415.1198.S, QMP Concrete Pavement Rural
- 415.2000.S, Incentive Strength Concrete Pavement
- 460.2500.S, QMP HMA Pavement Nuclear Density
- 440.1000.S, Incentive Profile Index HMA Pavement
- 440.2100.S, Incentive Profile Index Concrete Pavement
- 502.0300.S, QMP Concrete Structures 5-Cylinder
- 502.0400.S, Incentive Strength Concrete Structures.

- 6.** Check that all desired Construction Staking items are bid appropriately.

(Note that in the same area where "Construction Staking Concrete Pavement" is bid, the items "Construction Staking Base" & "Construction Staking Curb Gutter And Curb & Gutter" are not to be bid separately. See WisDOT 2003 Standard Specifications sub-section 650.4)

- 7.** Has the plan modified the work required for a standard item such that the standard item is no longer appropriate? If so, an "SPV." item should be used instead, to ensure we have specifications to detail the requirements and so a standard item's unit price is not skewed to throw off WisDOT's standard item unit price listings.

D. "SPV." (Non-standard) Trns•Port Items (General):

- 1.** Is each item's Supplemental Description title duplicated exactly from category to category as well as for multiple projects in the same contract? Use the menu selection "Open Proposal List => Select your Proposal => and then click on File => Run Process => Generate Proposal Schedule/Proposal estimate" to check that each

PLAN EXAMINER'S "BIDABILITY REVIEW" GUIDE

item appears only once. If not, then make appropriate item Supplemental Description corrections to the Project estimates and rerun the process and re-check to ensure they are now correct.

2. Is a description format similar to that of a similar standard bid item format being used where appropriate? If not, it should be. Is the unit of measure standard and appropriate?
3. Do the special provisions include an appropriate article for each non-standard "SPV." item and each ".S" item in the contract? Does the unit of measure for each non-standard "SPV." item in the Special Provisions match that of the item in the Proposal Estimate?

E. Standardized Special Provisions (STSP) ".S" items:

1. Check that correct item numbers have been used in the project estimates and that there is a special provision article for each of them.
2. Check that the unit of measure for each item in the Proposal Estimate is the correct unit of measure for that item in the Special Provisions.

F. Quantity Accuracy

1. Rough check quantities of major items.
2. Check that quantities appear reasonable for the Unit of Measure used and for the type and size of project.

Special Provisions: Guidelines

The Special Provisions is an important document. It overrides the plans and standard specifications, and controls some of the project's work. Use these guidelines to prepare your special provisions.

1. Ordering of specials.

<i>Article</i>	<i>Description</i>
1.*	General
2.*	Scope of Work
3.*	Prosecution and Progress
4.	Traffic
5.	Holiday Work Restrictions
6.	Utilities
7.	Other Contracts
8.	Relations with Railroads
9.	Hauling Restrictions
10.	Environmental Protection & Erosion Control Items
11.	Public Convenience and Safety
12.	Modifications to Standard Specifications <ul style="list-style-type: none">• Arranged in numerical order in accordance with the Standard Specifications• Traffic Control is found in section 643• Include .S items within this grouping.
13.	Non-Standard Bid Items, SPV Items <ul style="list-style-type: none">• Arranged in numerical order

*NOTE: These 3 articles are in EVERY set of Special Provisions.
Articles 4 through 11 may or may not be included.

Example:

- 1. General.*
- 2. Scope of Work.*
- 3. Prosecution & Progress.*
- 4. Traffic.*
- 5. Holiday Work Restrictions.*
- 6. Utilities.*
- 7. Removing Storm Sewer.*
- 8. QMP Base Aggregate, Item 301.0100.S.*
- 9. QMP Concrete Pavement, Item 415.3000.S; Incentive Strength Concrete Pavement, Item 415.2000.S.*
- 10. Traffic Control.*
- 11. Locating No-Passing Zones.*
- 12. Inlet Screen, Type H, Item SPV.0060.01.*

2. Consistency between Prosecution and Progress article and Project Completion Date provided on the Highway Work Proposal. Also, need to keep the project

consistent with respect to working days vs. calendar days. Do not redefine working days or calendar days. Other guidelines for this article:

- Include information that may affect a contractor's schedule of operations, such as swallow nests, fish spawning dates, any special arrangements with railroads or utilities that may affect when a contractor can do work, or areas where a contractor cannot do work.
 - If the contract is a completion date contract, do **not** provide the completion date within this article. This contract information is provided on the Highway Work Proposal.
 - Also, ensure that the time completion chart is consistent with the Highway Work Proposal—if it is a completion date contract, it should state so on the time completion chart.
 - Decision tree will be provided in an upcoming FDM update to help designers select the appropriate Prosecution and Progress STSP to use for their project.
3. **Increased liquidated damages.** Prior approval is needed from the Bureau of Highway Development (BHD), (see Project Development Liaison Engineers listing to determine district contact), for using increased liquidated damages or interim liquidated damages greater than the standard liquidated damages provided in the standard specifications. See FDM 11-60-5 for a discussion of Interim Liquidated Damages.
4. **Real Estate issues.**
- If a real estate issue affects a contractor's ability to do work at a particular time, that needs to be addressed in Prosecution and Progress article.
 - If the contractor needs to perform any Razing & Removing operations, the specials need to address how asbestos will be removed.
5. **Proprietary Items.** Unless permission has been obtained to use proprietary items, **three or more product choices** must be listed within the specials. To obtain permission for proprietary items, submit a public interest finding to the Project Development Liaison Engineer assigned to your district. Note: Writing the words "or equal" does NOT count as one of the three choices that must be provided.
6. **Include all necessary items in the contract.** For example, if the plan letter states that plant surveillance will be required for two years, make sure that the item of Landscape Planting Surveillance and Care is included in the proposal. Also, **do not include articles for items not included in the contract.** For example, if the bid item for moving signs is not in the contract, do not include a special addressing moving signs.
7. **Ensure that item titles in the special provisions match the item titles in the estimate.** The word "Special" is **not** needed after the description/title of an SPV item. The fact that it is an SPV item makes it a special item. Also, the word "Special" is automatically placed at the beginning of the item description by Trns*port.
8. **Avoid repetition.** Even if you believe emphasis is needed, avoid repetition in contract documents. Do **not** repeat verbiage in the special provisions that is

already stated elsewhere in the special provisions. Do **not** repeat language already included in the 2003 standard specifications or in the supplemental specifications. If the wording or punctuation is different between the references, and the intent is inadvertently changed, the contractor may be confused and interpret the contract differently from the designer's intent. If a claim is brought against the department in court, a judge may rule against the department for being sloppy in its preparation of contract documents.

9. **Check references** used in specials against the new 2003 Standard Specifications book.
 - For example, crushed aggregate base course and section 304 no longer exist in the 2003 specs book, rubblizing pavement is in the 2003 specs book, asphaltic sections are renumbered, and many items that were 900xx items are now ".S" items or have been incorporated into the new specifications.
 - Many ITS items are now included in the 2003 standard specifications and are standard bid items. Also, Temporary Traffic Signals for Bridges, Item 661.0100, is a standard bid item.
 - Review Field Office and Traffic Control articles. Many districts use a "standard" article for their district; many items that were once considered "unique" to the district are actually included in the new specifications. For example, such language as "All vehicles hauling materials that are subject to spillage shall be equipped with a tailgate...Covers and other protective measures should be used..." is now covered in 107.8(3). Or, it is now required that **all** field offices are furnished with bottled water, a fax machine, and three telephone exchange services.
10. **Lane Rental Charges.** The amounts of these charges need prior approval by BHD. When preparing an estimate, use a placeholder such as 0.10 hour for these items. The field engineer will use a negative quantity to subtract money due the contractor for these rental charges.
11. **Check all articles for consistency.** For example, one article may state that a minimum 48-hour notice is required for a particular action whereas another article may state that only a 24-hour notice is necessary. (Often happens in articles addressing traffic control or erosion control items.) Refer to #8 above.
12. **Any bid item that has an .S suffix or an SPV prefix must have an article in the special provisions.** Some standard bid items also need an article in the special provisions, such as Expansion Device (Structure), Pile Points, and Locating No Passing Zones. If writing an article for a standard bid item, do not include the bid item number in the title—the description is sufficient. For example, "Grouted Riprap Heavy" instead of "Grouted Riprap Heavy, Item 606.0700".
13. **Numbering .S items and SPV items.** Use numbers for sequential ordering instead of letters. For example, suppose the bid item 651.2000.S "Install Traffic Signal Controller & Cabinet (location)" is needed at three locations: Apple Street, Berry Street and Cherry Street. The items should appear on the estimate as:
 - 651.2000.S Install Traffic Signal Controller & Cabinet
 - 01. Apple Street

- 651.2000.S Install Traffic Signal Controller & Cabinet
 - 02. Berry Street
- 651.2000.S Install Traffic Signal Controller & Cabinet
 - 03. Cherry Street

The title of the article written for the specials should be: **Install Traffic Signal Controller & Cabinet, Apple Street, Item 651.2000.S.01; Berry Street, Item 651.2000.S.02; Cherry Street, Item 651.2000.S.03.** Number and title articles for SPV bid items in the same manner. For example, **Inlet Screen Type M, Item SPV.0060.01; Type H, Item SPV.0060.02; Type W, Item SPV.0060.03.**

14. Writing articles for .SPV items.

- **Use a five-part format: A Description, B Materials, C Construction, D Measurement, and E Payment.** If a particular section is not needed, say Construction, then type in "C (Vacant)" to retain the five-part format.
- If re-using an "old" version, please **double-check all references** made to the standard specifications. Convert metric unit references to English units.
- **Full-justify** the article, and **do not indent the first word** of each paragraph.
- The first paragraph of **A Description** should begin with the words: "This special provision describes..."
- The first paragraph of **B Materials** may begin with the words "Furnish (material) that is in accordance with the pertinent requirements of (section of the standard specifications).
- The first paragraph of **D Measurement** should begin with the words: "The department will measure (Item Title) by..."
- The first paragraph of **E Payment** should begin with the phrase: "The department will pay for measured quantities at the contract unit price under the following bid item:" This phrase should be followed by the Item Payment Table. The payment section for a bid item named Borrow Pit Tracking Pad may appear as:

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.01	Borrow Pit Tracking Pad	Each

Payment is full compensation for all grading; furnishing, hauling, and placing breaker run stone; furnishing and placing culvert pipes; maintaining the tracking pad; completely restoring the tracking pad area including furnishing and placing salvaged topsoil, seed, fertilizer, and mulch; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Note: Do not repeat the bid item name in the paragraph following the Item Payment Table. Ensure that the work referred to in this paragraph is work that was specified elsewhere in the article.

- **When referring to other bid items within SPV articles, ensure that those bid items are part of the proposal.** For example, add Temporary Cover Plates if using STSP 611-005 "Adjusting Manhole Covers", or include wiring items if writing an SPV

article for a Closed Loop System, etc. Also, ensure that the name of the item referred to in the SPV article is the same item name used in the estimate and on the plan details.

- Use **Active Voice**. When using active voice, **do not use the words “the contractor shall”**; instead, state what the contractor will do (often, the sentence will begin with a verb). For example, if one wanted to specify “The contractor shall submit certification to the engineer that the products used in the project meet the requirements listed above...” state “Submit certification to the engineer that ...”. Instead of “The contractor shall furnish #4 steel bars...”, state “Furnish #4 steel bars”.
- **Capitalize bid item names**. Little else is capitalized in the special provisions. For example, do **not** capitalize standard specifications, section, subsection, engineer, contractor, special provisions, city, plans, contract, work, owner, or department.
- **Avoid using “should”**; instead, tell the contractor what has to be done. The word “should” is only a kindly suggestion—it can’t be enforced!
- All Measurement and Payment sections should be written using **English units** of measure.
- **It may not be necessary to use the 5-part format for all SPV items**. For example, if the SPV item is a special curb type that is detailed in the plan, it may be sufficient to write: “All work shall be in accordance to section 601 of the standard specifications and the plan details.”
- **For examples, refer to the STSP’s**. They were rewritten in active voice and using the new format guidelines in August 2003. Also, refer to **FDM Procedure 19-15-80** for further guidance.

15. STSP Changes.

- **Don’t change an STSP unless there is a legitimate reason to do so**. Contractors are familiar with the STSP’s and have expectations regarding their content.
- Discuss changes made to STSP’s in the plan letter.
- If changes to an STSP is made and that STSP has a corresponding bid item:
 - Change the title of the bid item and the title of the revised STSP– for example, add “Special” to the end of the item name.
 - Change the .S item number to an SPV item number.
 - Eliminate the date and parentheses found at the end of the STSP document.
- **STSP’s are “living” documents**. Changes are frequently made to these documents—that is one of the reasons why many STSP items are not standard bid items. For this reason, insert the **latest** STSP in the special provisions.
- When using STSP’s, include all necessary information, such as structure information for Item 203.0210.S (Abatement of Asbestos Containing Materials (Structure)), contact information and flagging rates for railroad STSPs, required width of Temporary Structures, and spotting sight distance for Locating No Passing Zones.

16. Abbreviations. Some abbreviations are provided in subsection 101.2 of the standard specifications. When using other abbreviations, use standard protocol in

introducing the abbreviation. When using acronyms, do not place a period between every letter. For example, write "ASTM", not "A.S.T.M."

17. Style Points.

- **Ambiguous phrases** can be interpreted to have more than one meaning. Here are some examples:
 - *"Fasten the flange by nuts and bolts of stainless steel."* Which is stainless, both the nuts and the bolts, or just the bolts?
 - *"All lane closures shall be approved by the engineer."* A contractor could interpret this sentence to mean that the engineer will automatically approve all lane closures. The designer's intent may be better stated: *"Ensure that all lane closures have been approved by the engineer before using."* OR *"Obtain approval from the engineer before closing any lane."*
- **Avoid phrases such as "to the satisfaction of the engineer" or "meeting the approval of the engineer"**. Not only are these phrases ambiguous, they make the proposal un-biddable, because the bidder does not know to what standard his/her work will be held.
- **"Etc."** is short for "et cetera", which means "and others or "and the rest". Use of this word in specifications is inappropriate because contractors are not required to deliver items that are not specifically mentioned.
- **"The work consists of" vs. "The work includes"**:
 - "The work consists of" is a restrictive phrase; if any work not included in the words immediately following these words is done by the contractor, it could be billed back to the department as Extra Work.
 - "The work includes" is not a restrictive phrase and suggests that the scope of the work may be greater than the listing of work that immediately follows.
- In general, **be careful when using lists**. When using a list, ensure that it is complete. If there is a contract dispute, a court may assume that the contractor's obligation was to perform only the work that was specifically enumerated on the list, and that the designer intended to omit items not included in the list.
- **Cross-References**. Standard detail drawing numbers are frequently updated and provided new numbers. Bid numbers are sometimes changed, and the articles within the special provisions are often rearranged during the PS&E review process. Therefore,
 - If referring to another article within the special provisions, refer to its name.
 - If referring to another bid item, refer to the name of the bid item, not its number.
 - If referring to a standard detail drawing, refer to the name of the standard detail drawing, not its number.
- **Engineer/Project Manager/DOT's representative**: When referring to one of these people in the specials provisions, **use the term "engineer"**. Do NOT capitalize engineer. Subsection 101.3 defines the term "engineer" as "The

secretary of the department of transportation or the secretary's authorized representative limited by the particular duties assigned to the representative."

- **Lineal vs. Linear Feet.** When measuring length, use the word "linear", instead of "lineal". Lineal means belonging to or being in direct line of descent from an ancestor.
- **Avoid explanations;** avoid using the word "because". **Specifications specify; they do not explain.** Consider this sentence: "*Add glass beads to the pavement marking to increase reflectivity.*" Different users of the contract documents can interpret the informative phrase "to increase reflectivity" differently. Does it mean "add to all pavement markings", or does it mean "determine which paint markings have lower reflectivity (compared to others or the norm) and add the beads to the paint for those particular markings"?
- **Omitting phrases.** Do not omit words or phrases if there is any possibility of the intent becoming ambiguous. For example, do the omitted words "shall supply" in the following sentence belong after "and" or after "batteries"?

The generator shall supply the processor with 10.5 amperes and the batteries 8.5 amperes.

- **Keep your sentences short and simple.** Also, it is okay to repeat the same word or phrases. If you intend no difference in the meaning of two words, use only one of them.
- **Do not use the "/" mark** unless it represents the word "per". The virgule stroke is used between two words to show that the appropriate one may be chosen to complete the sense of the text. If A/B is written, it can be interpreted "either A or B" or "either A or B or both" or "both A or B" or "the number of A's divided by the number of B's". In special provisions, the contractor gets to choose the meaning, and the contractor may choose only one option, not both. In most cases, it is best to write "A or B, or both" to ensure that the engineer will have the authority to obtain what is needed from the contractor.
- **That vs. which.** In general, **that** introduces a "restrictive" or "defining" relative clause, which identifies the entity being talked about. **Which** is used to introduce a clause that typically contains incidental or nonessential information; a comma usually precedes it.
- **Use of numbers** in sentences. In general, spell out single digit numbers (zero through nine), and use figures for two or more digit numbers. There are many exceptions:
 - Always spell out a number that is at the beginning of a sentence.
 - Always use figures when a unit of measurement follows.
 - Use figures for all numbers when there are numbers of two or more digits for related quantities in the same sentence, such as "5 of 34 engineers recommend".
 - Always spell out approximate values, such as "about four years", or "approximately two times larger".
 - Do not spell out AND use figures for numbers; it is unnecessary.
- **Use of units.** All numerical values that have dimensions must have their units specified. General guidelines are:
 - If there are two numbers in the same phrase with the same units, put the units only after the second number, e.g., between 4 and 5 inches.

- All units that are named after a person have a lower-case first letter when written out, but an upper-case first letter when abbreviated. Hence, the proper abbreviation for "kilovolt" is "kV". The proper abbreviation for "megahertz" is "MHz"; "M" denotes "mega", and "m" can denote "meter" or the prefix "milli".
- The proper abbreviation for "second" is "s", not "sec".
- There should be one blank space between a number and a unit.
- Temperature has the unit of degree. There should be one blank space between the degree symbol and the degree type, e.g. "68° F" or "20° C" (or write out the word "degrees").
- If **specifying a date**, such as in the article for Holiday Work Restrictions, include the year.

18. Word-Processing Issues.

- Use people, who have been trained in how to create special provisions, to type the specials. They know how to properly use the templates and macros that have been prepared for developing special provisions.
- Don't use the "line" versions of the STSP in the actual special provisions. These documents contain special instructions to design personnel as to what information should be included within the STSP or when the STSP should be used, but do not contain merge codes and macros needed by the word processor preparing the final document.
- Use **bold** instead of underlines to emphasize titles or other text.

19. Revisions vs. Inserts. Use the following criteria to decide which should be sent:

- If the specials have already been reviewed by Jan or Dick, do **not** send in a revised file.
- Generally, if changes are needed to more than 10 articles or to more than about 20% of the document, revise the articles in the specials and resubmit the specials as a .rev file. If revisions are needed to three to five articles, send in an insert. Always include clear directions in an insert, such as what article should be deleted or added, **and what change was made**.
- If changes are needed in say one paragraph of an article, **just send in the paragraph as an insert in which there are changes**. If minor changes are needed throughout the entire article, send in the entire article as an insert and highlight the changes needed.

20. Geotechnical Issues.

- **Walls:** Minimum embedment depths of 1'-6" or greater (dependent on wall type) required. Also, provide allowable soil bearing capacity values on the plan. The engineering properties of the foundation and retained soils must also be shown, usually in a table. If a geotechnical analysis was done of the external stability of the wall, provide the safety factors that were obtained for global stability, sliding, and overturning. Refer to Chapter 14 of the Bridge Manual for more information.
- **Geotextile/Geogrid:**
 - If DF Fabric: Schedule A, B, or C? (For structure work, usually A.) These items now have separate item numbers.

- If reinforcement, double-check units. There has been some confusion over metric vs. English units and over ft/lb vs. inch/lb. Type ES, MS, and SR are usually designed by a geotechnical engineer, and the required strength values of the geosynthetic fabric is usually provided in the project's geotechnical report.
 - **Pre-drilling piling into rock:** Measure from the bottom of the hole to the bottom of footing, not just the distance into the rock.
 - **Pile Points:** Generally not needed unless driving into soils with cobbles and boulders, or into weathered bedrock.
 - **Pile Lengths:** Soil drillers should have taken the borings to at least the anticipated depth of the pile tips.
21. **Highway Work Proposal.** Use most recent version of form. Fill in **all** required fields of form DT1502, including *Type of Work* (found at bottom of page). Also, *Project Description* field information should be entered exactly as it is shown on the plan's Title Sheet and in FIIPS.
22. **Time Completion Chart.** The contract completion time provided on the time completion chart, i.e., the number of working days, the number of calendar days, or a completion date, must be in agreement with what is stated on the Highway Work Proposal.
23. **Miscellaneous Issues.**
- **ASP-1TOA and ASP-1TOG hours.** If these items are required, please note the number of hours and slots required in the plan letter. Double-check the number of hours needed with the district Equal Rights Officer.
 - **Notice to Contractor, Asbestos Containing Materials on Structure.** If the work includes removing a structure, the structure must be inspected for possible asbestos containing materials. Contact the district Environmental Coordinator and Shar TeBeest (BEES, 608.266.1476) for direction on which STSP should be inserted into the specials to address this issue.
24. **Take the time to read the special provisions over carefully** before submitting them to the Proposal Management Section for review. Do they make sense? Are there any inconsistencies? Is the intent clear, or can the contractor misinterpret the work specified? Is the format consistent? Are the articles in the proper format and order?
25. **Questions?** Contact Jan Kinar at 608.266.3611 or Dick Filsinger at 608.266.3811.